



ecology and environment, inc.

111 WEST JACKSON BLVD., CHICAGO, ILLINOIS 60604, TEL. 312-663-9415

International Specialists in the Environment

US EPA RECORDS CENTER REGION 5



582227

MEMORANDUM

DATE: September 9, 1992
TO: Karen Rydzewski, Project Manager, E & E, Chicago, IL
THRU: Tom Sedlacek, TAT-Chemist, E & E, Chicago, IL
FROM: Jane Malkin, TAT-Chemist, E & E, Chicago, IL
SUBJ: Inorganic Data Quality Assurance Review, Pierce Waste Oil, Springfield, IL

REF: Analytical TDD: T05-9207-818 Project TDD: T05-9207-029
Analytical PAN: EIL0167ABA Project PAN: EIL0167FAA

The data quality assurance review of 4 soil samples collected from the Pierce Waste Oil site in Springfield, Illinois has been completed. The analysis for metals by inductively coupled plasma (ICP) EPA method 6010 and atomic absorption (AA), EPA method 7000 series, and the analysis for mercury by manual cold-vapor technique (EPA method 7470) was performed by IEA, Schaumburg, Illinois.

The 4 soil samples were numbered: OS101 thru OS104.

Data Qualifications:

I. Sample Holding Time:

The metal samples were collected on July 31, 1992 and analyzed by August 17, 1992. This met the 6 months holding time allowed for metal samples, and the 28 days allowed for mercury samples.

II. Calibration

A. Initial Calibration and Calibration Verification: Acceptable

The percentage recoveries were within 90 - 110% of the true standard value for the metals, and within 80-120% of the true standard value for mercury. No contamination above the instrument detection limit (IDL) was detected in the initial calibration blank.

B. Continuing Calibration: Acceptable

All continuing calibration results were within the control limit of 90 - 110% for the metals and within 80 - 120% for mercury. No contamination above the IDL was detected in the continuing calibration blank.

III. Blanks: Acceptable

Method blanks were prepared and analyzed with the samples. No contamination above the IDL was detected.

IV. Interference Check Sample Analysis: Acceptable.

All percent recoveries in the ICP interference check sample (ICS) were within the control limits of 80 - 120%.

V. Laboratory Control Sample (LCS) Analysis: Acceptable

All the LCS recoveries were all within the control limits of 80-120%.

VI. ICP Serial Dilution: Acceptable

The ICP serial dilution percent differences were all within the control limit of 10% except for chromium, lead, and nickel. The positive results were flagged (E) as estimated by the lab.

VII. Matrix Spike/Matrix Spike duplicate (MS/MSD):

The percent recoveries were within the control limits of 75 - 125% except for arsenic, mercury, selenium, and antimony. The relative percent difference (RPD) were within the control limits of $\pm 20\%$ except for mercury, zinc, and selenium. The associated positive results were flagged (J) as estimated.

VIII. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in "Quality Assurance/Quality Control Guidance for Removal Activities" (OSWER Directive 9360.4-01, April 1990). Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

J - The associated numerical value is an estimated quantity because the reported concentrations were less than the contract required detection limits or quality control criteria were not met.

CLIENT ECOLOGY & ENVIRONMENTJOB NO. CH920820PROJECT NO. T05-9207-919WASTEPRIORITY POLLUTANT METALS
mg / kg

Client I.D.							Limits of Detection
		OS101	OS102	OS103	OS104		
Analyte	Lab I.D.	20820 001	20820 002	20820 003	20820 004		
Antimony	6010	<5.4	<27	<5.7	<5.6		6.0
Arsenic	7060	2.0	5.3	7.6	4.9		0.2
Beryllium	6010	<0.45	<2.3	<0.48	<0.46		0.5
Cadmium	6010	1.0	3.3	2.3	1.4		0.5
Chromium	6010	23E	11E	18E	11E		1.0
Copper	6010	230	37	57	30		2.5
Lead	6010	97E	130E	430E	340E		0.2
Mercury	7471	<0.31E	<0.38E	0.74E	0.63E		0.40
Nickel	6010	190E	<13E	11E	9.4E		3.0
Selenium	7740	<0.92E	<0.96E	<0.99E	<0.99E		1.0
Silver	6010	<0.90	<4.5	<0.95	<0.92		1.0
Thallium	7841	<0.92	<0.96	<0.99	<0.99		0.2
Zinc	6010	530E	220E	650E	220E		2.0

Final
9/10/92